REMARKS

Request for Reconsideration

Applicants have carefully considered the matters raised by the Examiner in the outstanding Office Action but remain of the position that patentable subject matter is present. Applicants respectfully requests reconsideration of the Examiner's position based on the attached replacement sheets, the amendments to the specification, the amendments to the claims and the following remarks.

The Invention

The present invention includes several features that are particularly pertinent to one or more of the pending rejections:

I. The sensor is radially displaced from the encoder, instead of being axially offset from it. In wheel-bearing units, the bearing rings (i.e., the races) often undergo axial displacement during use, which varies the gap between the sensor and encoder and thus their proper functioning.(See the last paragraph on page 4 of the disclosure.) By using a radial arrangement, this problem is substantially avoided, as the gap is more readily maintained in use when it is radial instead of axial.

II. The encoder is integrated into the sealing arrangement, which protects it from the environment.

III. The encoder is located outside the interspace (i.e., that area where the bearings or races axially overlap), which frees up space within the interspace for seals and related components.

Claim Status

Claims 1-17 are pending in this application.

Each claim has been amended herein to remove the reference characters and to place them into more conventional U.S. format. Claim 1 has further been amended to emphasize one of the novel aspects of the present invention, namely that neither the encoder nor the sensor penetrate into the interspace.

The Prior Art Rejections

A. Claims 1 – 5, 8, 9, and 15 stand rejected under 35 USC 102(b) as being anticipated by Caillaut et al.

Caillaut et al. clearly teach that the sensor 19 and encoder 17 are arranged in the interspace (see Fig. 7). As noted above, this stands in contrast to the Applicant's claimed approach, in which the sensor and encoder are placed outside the interspace while still providing protection of the latter from the environment. As Caillaut does not teach this, the rejection is improper and should be withdrawn.

B. Claims 1 – 4, 8 and 15 stand rejected under 35 USC 102(b) as being anticipated by Moretti et al.

Moretti shows a rather cramped arrangement, in which the sensor 22 substantially penetrates the interspace and, indeed, overlaps the ball bearing (see Fig. 2). In the claimed invention, neither the sensor nor the encoder penetrate the interspace. As this is not taught in Moretti et al., the rejection is improper and should be withdrawn.

C. Claims 1, 2 and 10 – 15 are rejected under 35 USC 102(b) as being anticipated by Alff.

The encoder of the present invention is protected from the environment by a covering element that fully covers it in both the radial and axial directions, and claim one has been amended to further highlight this aspect of the invention. As is clearly shown in Figure 7 of Alff, the encoder 17 is substantially exposed to the environment, unprotected by a cover such as is now claimed. For this reason, the rejection is not proper and should be withdrawn.

D. Claims 1 – 7, 14, and 15 stand rejected under 35 USC 102(b) as being anticipated by Angelo.

In making this rejection, the Examiner takes the position that Angelo teaches a sensor that is radially displaced from the sensor, even though Angelo does not show a sensor or describe its orientation in those terms. Instead, Angelo describes it thusly:

> The encoder wheel 13 is a *radially* oriented annular *disc* made of plastic or rubber magnetized material with alternating polarities around the circumference and mounted adjacent to the axially inner side 10b(that is to say towards the interior of the vehicle) of the radially outer rotating race 10. (Column 2, lines 9 – 15, italics added)

While the sensor is not shown in the figures, the clear interpretation of these words is that it is axially displaced from the encoder disc because that is how such "radially oriented" discs are employed in the art – across an axial gap. In view of this description and given the lack of any other illustration of a sensor that shows it radially displaced from the encoder (as the claims recite), the rejection is improper and should be withdrawn.

E. Claims 1, 2 and 10 – 15 stand rejected under 35 USC 102() as being anticipated by Niki JP 2003-107484, with particular reference being made to Figure 8.. (The undersigned notes that the Examiner appears to have used a Derwent Account No. to refer to JP Publication No. 2002-328133.)

Contra the presently claimed invention, the encoder 14 of Niki is axially open to the environment (see Figure 8), and thus open to dirt and other contamination that might degrade its performance in use. The presently claimed invention provides its encoder with full protection, which Niki does not. For at least this reason the rejection is improper and should be withdrawn.

F. Claim 17 stands rejected under 35 USC 103(a) as unpatentable over either Caillaut, Moretti, Alff, Angelo or Niki, in view of Otto for its teaching of lubricating grease; and Claim 16 stands rejected under 35 USC 103(a) as unpatentable over Alff, Angelo, and Niki, individually and as applied to claim 1, further in view of Ohtsuki et al.

Neither of these secondary references cures the deficiencies noted above in their parents, and thus these rejections too, are improper and should be withdrawn.

For the foregoing reasons these claims are believed to be patentable, and notification of same is earnestly solicited.

Conclusion

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance and such action is respectfully requested. Should any extensions of time or fees be necessary in order to maintain this Application in pending condition, appropriate requests are hereby made and authorization is given to debit Account # 02-2275.

Respectfully submitted,

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